

REMARKS

Claims 1-20 are pending in this application. Claim 1 is amended above. The amendment to claim 1 to change “a” to “the” in several occurrences is non-substantive and is because there is antecedent basis so that “the” would be more usual form. The amendment should be appropriate for entry after-final.

The independent claims in this application are claims 1, 7, 13, 14, 19.

At page 4, paragraph 5 of the Office Action, Claims 1-7 and 9-10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over a combination of Oh et al. (US 6,185,537), Byers (US 6,219,645) and Fukuda (US 6,456,721).¹ At page 11, paragraph 19 of the Office Action, Claim 13 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Dahan in view of Fukuda.² At page 14, paragraph 24 of the Office Action, Claims 14 and 19-20 have been rejected under 35 U.S.C. 103(a) as being unpatentable over a combination of Kimura (US Patent No. 5,199,080) and Fukuda.³

Applicant respectfully traverses all of the obviousness rejections.

The Primary References (Oh et al.; Dahan; Kimura)

None of the primary references cited (Oh et al.; Dahan; Kimura) discloses a bone conduction microphone. No reference of record discloses use of a bone conductive microphone for voice- or sound-activated operation of a computer. Use of bone conductive microphone for operation of a computer is an inventive concept, only now provided in this specification by Applicant. A person of ordinary skill in the art at the time of Applicant's invention lacked the knowledge

¹At page 8, paragraph 14, Claim 8 has been rejected under 35 U.S.C. 103(a) as being unpatentable over a combination of Oh et al., Fukuda, and Dahan et al. (US Patent No. 6,018,708). At page 9, paragraph 16 of the Office Action, Claims 11-12 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Oh et al., Fukuda, and Tognazzini (US Patent No. 5,790,974).

²At page 12, paragraph 21 of the Office Action, Claims 15 and 17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over a combination of Dahan, Fukuda, and Tognazzini.

³At page 17, paragraph 28, Claims 16 and 18 have been rejected as obvious based on a combination of Kimura, Fukuda, and Tognazzini.

or teaching of using a bone conductive microphone for operation of a computer.

Oh et al. has been cited as a primary reference. The Oh patent has as its main objective a hands-free audio memo system, with the emphasis being on a hands-free feature, such as for use while driving an automobile. As the Examiner admits, the Oh et al. patent fails to teach or disclose using a bone conduction microphone. Oh et al. rely on voice input at a sufficiently loud level to be picked up by a normal microphone. Oh et al. fail to disclose a user operating a computer surreptitiously, without using recognizable sound apparent to others in the vicinity. Oh et al. necessarily assumes that the sound emanated by the user is loud enough and recognizable enough to be input via a normal microphone at a distance from the speaker.

Dahan has been cited as another primary reference. Dahan fails to teach or disclose using a bone conduction speaker. Dahan is a speech-recognition system based on frequently occurring word sequences. Dahan gives examples of intended use for his invention: voice-activated dialing, credit card number identification, flight information. In Dahan, a normal telephone is used. Dahan's invention concerns how the input sound sent via a normal telephone is processed and matched.

Another primary reference is Kimura. Kimura fails to disclose a bone conduction microphone. Kimura relies on voice-operation (and not non-voice sounds) to run remote control systems.

The presently claimed invention provides unexpectedly superior results over any of the primary references (all of which lack the disclosure of a bone-conduction microphone). Namely, in the presently claimed invention, a user can surreptitiously and discretely activate a computer. In Oh et al., for example, it is impossible for a user to surreptitiously and discretely activate a computer, because the user must speak loudly enough to activate the microphone at a distance from him. In Kimura, for example, since voice-activation is needed, a user necessarily by using his voice would attract attention; moreover, the user in Kimura would be completely dependent on access to speak into a normal telephone in a normal voice, which is not required in Applicant's invention. Oh et al., Dahan, and Kimura each completely lack the property of permitting a user to surreptitiously and discretely activate a computer. That Applicant's presently claimed invention

has this property of permitting a user to surreptitiously and discretely activate a computer is evidence of nonobviousness. MPEP 716.02(a). Accordingly, the obviousness rejections should be withdrawn for this reason.

Byers; Tognazzini

The Examiner cites Byers as a secondary reference. Byers discloses an array of two or more “ordinary” microphones disposed throughout a room. Again, like in Oh et al., Byers assumes that a user is making sounds loudly enough to be picked up by the normal microphones which are at a distance from the speaker. The speaker moves around the room making sounds (col. 11, line 10) to teach and set the system, and the system in operation assumes that the speaker will be at a distance from the microphones.

Tognazzini fails to teach a bone conduction microphone. Tognazzini discusses a system of identifying calendar schedule conflicts.

Using a bone conduction microphone for computer operation based on sound recognition is an invention by Applicant. Even with the secondary references, a person of ordinary skill in the art would still fail to arrive at the presently claimed invention, because it would be outside his thinking to use a bone conduction microphone system for computer operation based on sound recognition input via the bone conduction microphone—that basic concept being inventive, in this specification, and completely outside what a person of ordinary skill in the art would think.

Fukuda

Fukuda is the only reference disclosing a bone conduction microphone that the Examiner has cited, and Fukuda is very removed from the presently claimed invention. Fukuda is so far removed from the presently claimed invention that the

There is no art of record in which a bone conduction microphone has been used for voice (or sound) activation of a computer. Fukuda, which discloses a bone conduction microphone in a two-way speech system, fails to teach or disclose operating a computer. Fukuda is directed to a conspicuous-looking microphone system, for use in two-way speech, such as would be used regularly in broadcasting, by a tech crew, or by coaching staff at a game.

Fukuda is not reasonably combined with any of the other references in the manner that the Examiner proposes. Fukuda uses bone conduction microphones, which are quite different from the microphones used in the other references (such as Oh and Byers) which operate at a distance from the user. There is a body of technology that has developed for bone conduction microphones. All of the obviousness rejections rely on Fukuda, and should be withdrawn because of Fukuda's not being properly combined with the other references.

Fukuda just teaches a particular bone conduction microphone. Fukuda fails to teach or disclose substituting a bone conduction microphone for other kinds of microphones. The Examiner incorrectly treats Fukuda as if it is disclosing more than it actually discloses. Fukuda fails to teach or disclose any sort of interchangeability of a bone conduction microphone for any other microphone in any other system besides the two-way communication headset system Fukuda disclosed.

The Obviousness Rejections are Based on Other Incorrect Assumptions

The Examiner is assuming, incorrectly, that a person of ordinary skill in the art would treat a bone conduction microphone as interchangeable with any other microphone. That is an incorrect assumption that underlies all of the obviousness rejections.

For example, a person of ordinary skill in Applicant's art in fact would lack motivation to attempt to modify Oh based on Fukuda, because he would lack knowledge of any prior use of bone conduction microphones in voice-activated technology and therefore could only think of bone conduction microphone technology as separate from voice-activated technology.

As the Examiner says, voice-activated technology has been a well-known technology in the speech recognition art for many years. (Final Office Action, page 2.) Yet, the Examiner has not cited any reference in which voice-activated technology uses a bone conduction microphone. The combination of voice-activation technology and bone conduction microphone technology is simply outside the purview of a person of ordinary skill in the art—it is a combination not seen yet in any reference. It must be considered inventive (Applicant's invention), not casually imputed to a person of ordinary skill in the art at the time of

Applicant's invention.

Applicant's use of a bone conduction microphone for operating a computer system is inventive and nowhere disclosed in any art. The Examiner has not cited any reference disclosing a bone conduction microphone in any use or system even close to Applicant's present invention. Applicant's present invention of using a bone conduction microphone for surreptitious, non-voice activated operation of a computer system is completely inventive and very removed from any existing technology.

Reading any combination of the cited references, the person of ordinary skill in the art would not be taught the presently claimed invention. The person of ordinary skill in the art would lack the idea to use a bone conduction microphone in voice- or non-voice-sound-activated technology, because that concept, being an inventive concept of Applicant, would be outside the thinking of a person of ordinary skill in the art.

Also, the obviousness rejection is completely based on the Examiner's erroneous assumption that a person of ordinary skill in the art would think that a bone conduction microphone would be useable in the same circumstances as a normal microphone. That assumption is incorrect.

The reasons mentioned herein apply to all of the claims. For simplicity, additional arguments particular to certain dependent claims are not presented at this time. For the reasons more fully set forth above, reconsideration and withdrawal of the obviousness rejection are respectfully requested.

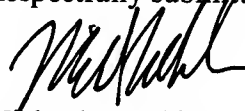
In view of the foregoing, it is respectfully requested that the application be reconsidered, that claims 1-20 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephone or personal interview.

A provisional petition is hereby made for any extension of time necessary for the continued pendency during the life of this application. Please charge any

fees for such provisional petition and any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041 (Whitham, Curtis & Christofferson, P.C.)

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael E. Whitham".

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